BOBBY JINDAL
GOVERNOR

PEGGY M. HATCH
SECRETARY

# State of Louisiana

## DEPARTMENT OF ENVIRONMENTAL QUALITY
## ENVIRONMENTAL SERVICES

Certified Mail No.

Agency Interest No. 166443
Activity No.: PER20090002

Mr. Peter Nichols
SNF Holding Company
Post Office Box 250
Riceboro, Georgia 31323

RE: Prevention of Significant Deterioration permit, Flopam Inc., Plaquemine, Iberville Parish, Louisiana

Dear Mr. Peter Nichols:

Enclosed is the PSD permit for the proposed Flopam's facility. Construction of the proposed facility is not allowed until such time as the corresponding operating permit or authorization to construct is issued.

Please be advised that pursuant to provisions of the Environmental Quality Act and the Administrative Procedure Act, the Department may initiate review of a permit during its term. However, before it takes any action to modify, suspend or revoke a permit, the Department shall, in accordance with applicable statutes and regulations, notify the permittee by mail of the facts or operational conduct that warrant the intended action and provide the permittee with the opportunity to demonstrate compliance with all lawful requirements for the retention of the effective permit.

Should you have any questions concerning the permit, contact Dan Nguyen at 225-219-3118.

Sincerely,

Cheryl Sonnier Nolan
Assistant Secretary

______________________
Date

CSN: DCN
c: US EPA Region 6

**PSD-LA-747**
**AI No. 166443**

**AUTHORIZATION TO CONSTRUCT AND OPERATE A NEW OR MODIFIED FACILITY PURSUANT TO THE PREVENTION OF SIGNIFICANT DETERIORATION REGULATIONS IN LOUISIANA ENVIRONMENTAL REGULATORY CODE, LAC 33:III.509**

In accordance with the provisions of the Louisiana Environmental Regulatory Code, LAC 33:III.509,

Flopam Inc.
Post Office Box 250
Riceboro, Georgia 31323

is authorized to construct and operate a manufacturing complex near

Plaquemine
Iberville Parish, Louisiana

subject to the emissions limitations, monitoring requirements and other conditions set forth hereinafter.

This permit and authorization to construct shall expire at midnight on ____________________, unless physical on site construction has begun by such date, or binding agreements or contractual obligations to undertake a program of construction of the source are entered into by such date.

Signed this_____________day of ____________________, 2010.

Cheryl Sonnier Nolan
Assistant Secretary
Office of Environmental Services

# BRIEFING SHEET

## FLOPAM INC.
## AGENCY INTEREST NO. 166443
## PLAQUEMINE, IBERVILLE PARISH, LOUISIANA
## PSD-LA-747

## PURPOSE

To obtain a PSD permit for a proposed manufacturing complex.

## RECOMMENDATION

Approval of the proposed permit.

## REVIEWING AGENCY

Louisiana Department of Environmental Quality, Office of Environmental Services, Air Permits Division

## PROJECT DESCRIPTION

The proposed manufacturing complex will consist of the Acrylamide Plant, Powder Plant, Diallyldimethylammoniumchloride (DADMAC) Plant, Specialty Products Plant, Emulsion Plant, a Polyamine Plant, Dimethylamineoethylacrylate (ADAM) Plant, Chloromethylation (CM) Plant, Acrylamido Tertio Butyl Sulfonate (ATBS) Plant, and auxiliary and miscellaneous equipment. Production from the Acrylamide, CM, ADAM, and ATBS Plants will primarily be used as raw materials for other facility operations.

### 1. Acrylamide Plant:

Acrylonitrile, dilute sodium acrylate solution, water, and biocatalyst will be fed to the reactors. Sodium hydroxide will be used to maintain desired pH. The product will be an aqueous acrylamide solution with traces of acrylonitrile and spent catalyst. Catalyst will be separated for disposal as necessary. Acrylamide products will be stored in day tanks and then pumped to bulk storage tanks which will be sparged with air to inhibit polymerization. Acrylamide will periodically be transferred offsite or used as raw materials for other processes. Water scrubbers will be used to control emissions from tanks and process areas. The Acrylamide Plant will consist of up to five production lines.

### 2. Powder Plant:

The Powder Plant will use acrylamide, sodium hydroxide, acrylic acid, and cationic monomers to produce polyacrylamide powder flocculants. Raw materials will be mixed in a dissolution tank and then transferred to the reactor for polymerization. The gel product will be ground into small particles and dried. The dried product will be screened, bagged, and then shipped out to customers. Particulate emissions from screening, bagging, rebagging, truck loading, silos, and product handling operations will be controlled by dust collectors. The Powder Plant will consist of up to ten production lines.

# BRIEFING SHEET

## FLOPAM INC.
## AGENCY INTEREST NO. 166443
## PLAQUEMINE, IBERVILLE PARISH, LOUISIANA
## PSD-LA-747

**3. Diallyldimethylammoniumchloride (DADMAC) Plant:**

Dimethylamine (DMA), allyl chloride (AC), and sodium hydroxide will be charged to a reactor to produce diallyldimethylammoniumchloride (DADMAC). Solids (salts) from the reaction mass will be removed while water and allyl alcohol will be recovered via distillation. Vent from the reactor may be condensed prior to combustion in the thermal oxidizer which will be followed by a water scrubber. DADMAC monomer will be transferred to a reactor for polymerization. The DADMAC polymer will be sent to storage tank and then packed in drums, totes, or shipped offsite in tank trucks. The DADMAC Plant will consist of up to two production lines.

**4. Specialty Products Plant:**

DADMAC, calcium chloride, and catalyst will be used to produce "base" at the Specialty Products Plant. The reaction mass will be neutralized using hydrochloric acid and caustic solution, concentrated, and stored in tanks. The reactors and the neutralization and adjustment tanks will be controlled by scrubbers. The Specialty Products Plant may be used as an emulsion production line.

**5. Emulsion Plant:**

Emulsified cationic, anionic, and nonionic polyacrylamide polymers will be produced at the Emulsion Plant. Raw materials, including acrylamide and a base, such as sodium hydroxide (for anionic polyacrylamide polymers), cationic monomer (for cationic polyacrylamide polymers) will be mixed in a dissolution tank and then transferred to the reactor along with oil, surfactant, and catalysts. The reaction mass will be filtered prior to storage or packaging. The Emulsion Plant will consist of up to ten production lines. Two lines will be designated to use ammonium hydroxide as the base and will be equipped with water scrubbers for odor control.

**6. Polyamine Plant:**

After charging the reactor with ethylenediamine (EDA) and dimethylamine (DMA), Epichlorohydrin (EPI) will be added to start the reaction. The polyamine product will be collected, stored in tanks prior to shipping or packaging. Reactor vent will be controlled by a water scrubber. The Polyamine Plant will consist of two production lines.

**7. Dimethylamineoethylacrylate (ADAM) Plant:**

ADAM will be produced via transesterification by reacting an Acrylate ester (methyl acrylate (MA) or ethyl acrylate (EA)) with an alcohol (dimethylamineoethanol (DMOH)) to produce the product ester (ADAM) and a co-product alcohol (methanol or ethanol). Raw material will be charged into a reactor. The reaction mass will be distillated to removed the alcohol co-product which will then be sold or burned in the on-site boilers. The product will be refined by distillation and then stored. Vents from the process will be controlled by a thermal oxidizer as required by 40 CFR 63 Subpart FFFF (MON).

# BRIEFING SHEET

## FLOPAM INC.
## AGENCY INTEREST NO. 166443
## PLAQUEMINE, IBERVILLE PARISH, LOUISIANA
## PSD-LA-747

**8. Chloromethylation (CM) Plant:**

This chloromethylation process will produce dimethylamineoethylacrylate - methyl chloride (ADAM-MeCl) or dimethylamineoethylmethacrylate - methyl chloride (MADAM-MeCl) using MeCl, ADAM, and MADAM. ADAM-MeCl and MADAM-MeCl are cationic monomers that will be used in other facility processes or sold as products. Vent from the reactor will be burned in the thermal oxidizer which will be followed by a water scrubber.

**9. Acrylamido Tertio Butyl Sulfonate (ATBS) Plant:**

ATBS will primarily be produced as a raw material for other facility processes. Water, oleum, and acrylonitrile will be mixed. Isobutene will be added later to form ATBS. The slurry reaction mass will be filtered, washed, and dried. The dried ATBS will be conveyed to silos and then packaged. Acrylonitrile from various steps of the process will be recovered, neutralized, filtered, stripped, and stored for reuse. Vent from the process will be controlled by the ADAM thermal oxidizer. Particulate emissions from the ATBS conveyor, silos, and packaging operations will be controlled by dust collectors.

**10. Auxiliary and Miscellaneous Equipment:**

Auxiliary equipment will consists of up to ten 25.1 MM BTU/hr boilers and four ethylene glycol tanks for the chilled coolant system.

Permitted emissions in tons per year will be as follows:

| Pollutant | Proposed Emissions | PSD De Minimis | PSD Analysis Required? |
|---|---|---|---|
| PM | 29.58 | 25 | Yes |
| $PM_{10}$ | 27.68 | 15 | Yes |
| $PM_{2.5}$ | 7.76 | 10 | No |
| $SO_2$ | 9.42 | 40 | No |
| $NO_X$ | 131.15 | 40 | Yes |
| CO | 207.92 | 100 | Yes |
| VOC | 127.34 | 40 | Yes |

## TYPE OF REVIEW

$NO_X$, CO, and VOC emissions from the proposed facility will be more than the PSD major source threshold. Emissions of PM and $PM_{10}$ will be more than the respective PSD significance levels. $PM_{2.5}$ emissions will be less than the PSD significance level of 10 tons/year. VOC is a precursor of ozone which is subject to NNSR analysis. Therefore, VOC is exempt from PSD review. A PSD analysis is required for PM, $PM_{10}$, $NO_X$, and CO emissions.

# BRIEFING SHEET

## FLOPAM INC.
## AGENCY INTEREST NO. 166443
## PLAQUEMINE, IBERVILLE PARISH, LOUISIANA
## PSD-LA-747

### BEST AVAILABLE CONTROL TECHNOLOGY

$PM/PM_{10}$, $NO_X$, and CO emissions from the affected equipment, such as, boilers, thermal oxidizers, dryers, tanks, materials storage and handling, fugitives, and other associated equipment are controlled by BACT.

Flopam Inc. will control $NO_X$ emissions from the facility to the LAER to fulfill the BACT requirements for $NO_X$. $NO_X$ emissions from the boilers will be controlled by Low $NO_X$ burners. Good equipment design and proper combustion practices are determined as BACT for CO and particulate ($PM/PM_{10}$) emissions from combustion devices and $NO_X$ emissions from the dryers and thermal oxidizers. Particulate emissions from the Powder Plant will be controlled by dust filters.

### AIR QUALITY IMPACT ANALYSIS

Screen dispersion modeling indicates that maximum offsite ground level concentration of $PM_{10}$ (24 hour average) and CO (1-hour average and 8-hour average) emissions from the proposed facility will be less than the Class II Air Quality Significant Impact Levels and monitoring de minimis levels. Preconstruction monitoring, refined modeling, and increment modeling are not required.

Screen dispersion modeling indicates that maximum offsite ground level concentration of $NO_2$ (annual average) and $PM_{10}$ emissions from the proposed facility will be more than the Class II Air Quality Significant Impact Levels but less than the monitoring de minimis levels. Preconstruction monitoring is not required. Refined modeling and increment modeling are required.

The refined modeling shows that impacts of $NO_2$ emissions will not cause or contribute to any NAAQS exceedances. Increment allowances are expected to be preserved for $NO_2$ and $PM_{10}$.

Emissions of $PM_{2.5}$ will be less than the PSD significance level. $PM_{2.5}$ modeling is not required.

### ADDITIONAL IMPACTS

Soils, vegetation, and visibility will not be adversely impacted by the proposed project, nor will any Class I area be affected. The proposed facility will employ approximately 500 employees. Secondary growth effects will be minimal.

### PROCESSING TIME

| | |
|---|---|
| Application Dated: | August 20, 2009 |
| Additional Information: | November 20, December 4, 2009, January 7, February 19, 2010 |
| Effective Completeness: | February 20, 2010 |

# BRIEFING SHEET

## FLOPAM INC.
## AGENCY INTEREST NO. 166443
## PLAQUEMINE, IBERVILLE PARISH, LOUISIANA
## PSD-LA-747

### PUBLIC NOTICE

A notice requesting public comment on the proposed permit was published in *The Advocate*, Baton Rouge, and in the *Post-South*, Plaquemine, on XXX. The notice was also mailed to individuals and organizations on the mailing list of the facility and published in the Office of Environmental Services Public Notice Mailing List. The permit application, the proposed permit, and the Statement of Basis were submitted to the Iberville Parish Library – Headquarters. The proposed permits and the Statement of Basis were submitted to United States Environmental Protection Agency (US EPA) Region 6.

To provide the public an opportunity to comment on the proposed permits, a public hearing was held XXX, beginning at 6:00 p.m., at the XXX. All comments will be considered prior to a permit decision.

## PRELIMINARY DETERMINATION SUMMARY

## FLOPAM INC.
## AGENCY INTEREST NO. 166443
## PLAQUEMINE, IBERVILLE PARISH, LOUISIANA
## PSD-LA-747, FEBRUARY 20, 2010

### I. APPLICANT

Flopam Inc.
Post Office Box 250
Riceboro, Georgia 31323

### II. LOCATION

The proposed facility is located at 26790 US Highway 405, on the west bank of the Mississippi River, approximately 6 miles east of Plaquemine, Iberville Parish. Approximate UTM coordinates are 678.20 kilometers East and 3349.40 kilometers North, Zone 15.

### III. PROJECT DESCRIPTION

The proposed manufacturing complex will consist of the Acrylamide Plant, Powder Plant, Diallyldimethylammoniumchloride (DADMAC) Plant, Specialty Products Plant, Emulsion Plant, a Polyamine Plant, Dimethylamineoethylacrylate (ADAM) Plant, Chloromethylation (CM) Plant, Acrylamido Tertio Butyl Sulfonate (ATBS) Plant, and auxiliary and miscellaneous equipment. Production from the Acrylamide, CM, ADAM, and ATBS Plants will primarily be used as raw materials for other facility operations.

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Dimethylamine (DMA), allyl chloride (AC), and sodium hydroxide will be charged to a reactor to produce diallyldimethylammoniumchloride (DADMAC). Solids (salts) from the reaction mass will be removed while water and allyl alcohol will be recovered via distillation. Vent from the reactor may be condensed prior to combustion in the thermal oxidizer which will be followed by a water scrubber. DADMAC monomer will be transferred to a reactor for polymerization. The DADMAC polymer will be sent to storage tank and then packed in drums, totes, or shipped offsite in tank trucks. The DADMAC Plant will consist of up to two production lines.

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DADMAC, calcium chloride, and catalyst will be used to produce "base" at the Specialty Products Plant. The reaction mass will be neutralized using hydrochloric acid and caustic solution, concentrated, and stored in tanks. The reactors and the neutralization and adjustment tanks will be controlled by scrubbers. The Specialty Products Plant may be used as an emulsion production line.

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Emulsified cationic, anionic, and nonionic polyacrylamide polymers will be produced at the Emulsion Plant. Raw materials, including acrylamide and a base, such as sodium hydroxide (for anionic polyacrylamide polymers), cationic monomer (for cationic polyacrylamide polymers) will be mixed in a dissolution tank and then transferred to the reactor along with oil, surfactant, and catalysts. The reaction mass will be filtered prior to storage or packaging. The Emulsion Plant will consist of up to ten production lines. Two lines will be designated to use ammonium hydroxide as the base and will be equipped with water scrubbers for odor control.

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ADAM will be produced via transesterification by reacting an Acrylate ester (methyl acrylate (MA) or ethyl acrylate (EA)) with an alcohol (dimethylamineoethanol (DMOH)) to produce the product ester (ADAM) and a co-product alcohol (methanol or ethanol). Raw material will be charged into a reactor. The reaction mass will be distillated to removed the alcohol co-product which will then be sold or burned in the on-site boilers. The product will be refined by distillation and then stored. Vents from the process will be controlled by a thermal oxidizer as required by 40 CFR 63 Subpart FFFF (MON).

### 8. Chloromethylation (CM) Plant:

The process will involve chloromethylation using methyl chloride (MeCl) and dimethylamineoethylacrylate (ADAM) or dimethylamineoethylmethacrylate (MADAM) to produce ADAM-MeCl or MADAM-MeCl, respectively. ADAM-MeCl and MADAM-MeCl are cationic monomers that will be used in other facility processes or sold as products. Vent from the reactor will be burned in the thermal oxidizer which will be followed by a water scrubber.

### 9. Acrylamido Tertio Butyl Sulfonate (ATBS) Plant:

ATBS will primarily be produced as a raw material for other facility processes. Water, oleum, and acrylonitrile will be mixed. Isobutene will be added later to form ATBS. The slurry reaction mass will be filtered, washed, and dried. The dried ATBS will be conveyed to silos and then packaged. Acrylonitrile from various steps of the process will be recovered, neutralized, filtered, stripped, and stored for reuse. Vent from the process will be controlled by the ADAM thermal oxidizer. Particulate emissions from the ATBS conveyor, silos, and packaging operations will be controlled by dust collectors.

### 10. Auxiliary and Miscellaneous Equipment:

Auxiliary equipment will consists of up to ten 25.1 MM BTU/hr boilers and four ethylene glycol tanks for the chilled coolant system.

Permitted emissions from the proposed facility in tons per year will be as follows:

| Pollutant | Proposed Emissions | PSD De Minimis | Subject to PSD Analysis |
|---|---|---|---|
| PM | 29.58 | 25 | Yes |
| $PM_{10}$ | 27.68 | 15 | Yes |
| $PM_{2.5}$ | 7.76 | 10 | No |
| $SO_2$ | 9.42 | 40 | No |
| $NO_X$ | 131.15 | 40 | Yes |
| CO | 207.92 | 100 | Yes |
| VOC | 127.34 | 40 | Yes |

$NO_X$, CO, and VOC emissions from the proposed facility will be more than the PSD major source threshold. Emissions of PM and $PM_{10}$ will be more than the respective PSD significance levels. $PM_{2.5}$ emissions will be less than the PSD significance level of 10 tons/year. VOC is a precursor of ozone which is subject to NNSR analysis. Therefore, VOC is exempt from PSD review. A PSD analysis is required for PM, $PM_{10}$, $NO_X$, and CO emissions.

PRELIMINARY DETERMINATION SUMMARY

FLOPAM INC.
AGENCY INTEREST NO. 166443
PLAQUEMINE, IBERVILLE PARISH, LOUISIANA
PSD-LA-747, FEBRUARY 20, 2010

## IV. SOURCE IMPACT ANALYSIS

A proposed net increase in the emission rate of a regulated pollutant above de minimis levels for new major stationary sources requires review under Prevention of Significant Deterioration regulations, LAC 33:III.509. PSD review entails the following analyses:

A. A determination of the Best Available Control Technology (BACT);

B. An analysis of the existing air quality and a determination of whether or not preconstruction or post-construction monitoring will be required;

C. An analysis of the source's impact on total air quality to ensure compliance with the National Ambient Air Quality Standards (NAAQS);

D. An analysis of the PSD increment consumption;

E. An analysis of the source related growth impacts;

F. An analysis of source related growth impacts on soils, vegetation, and visibility;

G. A Class I Area impact analysis; and

H. Toxic impacts

### A. BEST AVAILABLE CONTROL TECHNOLOGY

Under current PSD regulations, an analysis of "top down" BACT is required for the control of each regulated pollutant emitted from a new major source in excess of the specified significant emission rates. The top down approach to the BACT process involves determining the most stringent control technique available for a similar or identical source. If it can be shown that this level of control is infeasible based on technical, environmental, energy, and/or cost considerations, then it is rejected and the next most stringent level of control is determined and similarly evaluated. This process continues until a control level is arrived at which cannot be eliminated for any technical, environmental, or economic reason. A technically feasible control strategy is one that has been demonstrated to function efficiently on identical or similar processes.

**BACT analysis for $NO_X$ emissions**

The proposed facility will be constructed near Plaquemine, Iberville Parish, in the Baton Rouge ozone non-attainment area. As required by the Non-attainment New Source Review (NNSR) program, $NO_X$ emissions, precursors of ozone emissions, will be controlled to the Lowest Achievable Emission Rates (LAER). Flopam Inc. proposes to control $NO_X$ emissions to the LAER to fulfill the BACT requirements for $NO_X$. The LAER analysis for $NO_X$ emissions is detailed in the following paragraphs.

Selective catalytic reduction (SCR) is the most effective post-combustion $NO_X$ control method analyzed. In the process, a reducing agent is introduced into the flue gas upstream of a catalyst bed which is maintained at elevated temperature. An SCR can reduce $NO_X$ emissions by 80% - 90% using ammonia as the reducing agent. However, ammonia emissions are a negative side effect of the technology. Implementing SCR would require substantial capital expenditures and additional energy to keep the catalyst bed at high temperatures. Beside the high costs related to the construction and operation, the SCR also has some safety concerns, technical difficulties, and negative environmental impacts associated with ammonia emissions as well as catalyst handling and disposal.

Selective non-catalytic reduction (SNCR) is a post-combustion process in which a reagent mixture is injected into an elevated-temperature flue gas stream. Using urea solution as the reagent, the process can reduce 85% of $NO_X$ into nitrogen, water, and $CO_2$. The process may release ammonia during the incomplete decomposition of urea. Additional energy is required to increase flue gas temperatures to process conditions.

Staged combustion (low $NO_X$) burners (LNB) are designed for distributed air flow and minimal flame length to optimize furnace conditions and minimize $NO_X$ levels. The amount of $NO_X$ formed during combustion is influenced by time, temperature, and oxygen concentration. Low $NO_X$ burners minimize $NO_X$ formation by lowering flame temperatures through staged fuel and combustion air. The technology can be improved by combining with other techniques, such as flue gas recirculation. The Ultra LNB (ULNB) can reduce $NO_X$ emissions to 0.015 lbs/MM BTU or less. No additional energy is required. The technology is reliable, as well as having low capital and operating costs.

The flue gas recirculation (FGR) technique mixes the hot flue gas with the air/natural gas mixture fed to the boilers/heaters. This practice suppresses oxygen partial pressure and lowers flame temperature, and as a consequence, $NO_X$ emissions will be reduced. Flue gases are re-circulated either with an external or an internal design. To maximize the $NO_X$ reduction, the FGR technique can be combined with other options, such as LNB+FGR, SCR+LNB+FGR, and SNCR+LNB+FGR.

A comparison of the control strategies listed above indicates that for controlling $NO_X$ emissions from the boilers, the highest control efficiency is the combination of SCR and ULNB. Because the proposed UNLB option can maintain $NO_X$ emissions at or below 0.015 lbs/MM BTU, the safety concerns, technical difficulties, and negative environmental impacts associated with an SCR outweighed the gained benefits. Therefore, the SCR is rejected as a viable control technology.

The next control option is the combination of SNCR and ULNB. This combination has never been used in industry and there is no information available to demonstrate that the theoretical $NO_X$ emissions level can be achieved. SNCR in combination with ULNB is not considered technically feasible and was rejected as LAER for the control of $NO_X$ emissions from the proposed boilers.

Flopam Inc. proposes ULNB to limit $NO_X$ emissions to 0.015 lbs/MM BTU or 9 ppmv (at 3% oxygen) from the proposed boilers. This control level meets or exceeds current LAER entries in the EPA RACT/BACT/LAER Clearinghouse (RBLC). The ULNB is determined as LAER, for $NO_X$ emissions from the proposed boilers.

Three small thermal oxidizers (< 10 MM BTU/hr) will be used to control hydrocarbons emissions from various sections of the facility. Due to the characteristics of the streams and the small sizes of the thermal oxidizers, SCR, SNCR, and ULNB/LNB are not feasible. Good equipment design and proper combustion techniques to maintain maximum $NO_X$ emissions to 0.133 lbs/MM BTU are the remaining options. These are determined as LAER.

$NO_X$ will also be emitted from ten Powder Plants. Flue gases from natural gas-fired burners will be utilized to dry polyacrylamide products. The exit streams are diluted, saturated with moisture, and laden with polyacrylamide products (dust). With these stream characteristics, SCR, SNCR, and ULNB/LNB are not feasible. Good equipment design and proper combustion techniques to maintain maximum $NO_X$ emissions to 2.40 lbs/hour per dryer stack are the remaining options.

**BACT analysis for CO emissions**

Thermal oxidation is the first control option considered for CO emissions. Flue gases from combustion equipment could be routed through a thermal oxidizer where the gases will be heated to an operating range of 1200 - 2000$^{O}$F. At this temperature, CO will be burned to carbon dioxide. Raising exit gas to the appropriate temperature range will require a significant amount of energy and generate a large quantity of secondary emissions.

Catalytic combustion of carbon monoxide is another control option. Flue gas can be burned in a catalyst bed at 650 - 800$^{O}$F. Approximately 90 percent of the carbon monoxide would be converted to carbon dioxide. Additional energy is required to maintain flue gas at an appropriate temperature and send it through the catalyst bed. The catalyst bed, containing heavy metals, requires periodic replacement and recycling and/or disposal.

Boilers can be considered as thermal oxidizers themselves. Adding a thermal oxidizer downstream of a boiler to control CO is impractical and is rejected as BACT. Catalytic combustion is rarely used to control CO emissions from natural gas or propane-fired combustion devices.

$NO_X$ emissions from the boilers will be controlled by ULNB. This $NO_X$ control also affects CO emissions. To maintain $NO_X$ emissions at this LAER/BACT level, there is no CO control option other than good equipment design and proper combustion practices. Good equipment design and proper combustion practices are determined as BACT to maintain maximum CO emissions at 0.037 lbs/MM BTU.

There is no feasible add-on control option to control CO emissions from the thermal oxidizers and the Powder Plant dryers. Good equipment design and proper combustion practices are determined as BACT to maintain maximum CO emissions from the thermal oxidizers at 0.08 lbs/MM BTU. Good equipment design and proper combustion practices are determined as BACT for CO emissions from the Powder Plant dryers.

## PRELIMINARY DETERMINATION SUMMARY

## FLOPAM INC.
## AGENCY INTEREST NO. 166443
## PLAQUEMINE, IBERVILLE PARISH, LOUISIANA
## PSD-LA-747, FEBRUARY 20, 2010

### BACT analysis for PM/$PM_{10}$ emissions

Control techniques for PM are also considered as control options for $PM_{10}$. The options include cyclones, electrostatic precipitators (ESP), fabric filters, wet scrubbers, good combustion practices, and use of gaseous fuels.

Cyclones collect particulate laden gases and force them to spin in a vortex resulting in a change in direction of the particles. The particles then drop out of the gas stream. Cyclones are generally used to reduce dust loading and collect large particles.

ESPs operate by electrically charging particles and then separating them from the gas stream with a collector of opposite charge. High voltage direct current discharge electrodes, typically wires, are suspended in the gas stream to impose a negative charge on the particles. The particles are driven to positive collecting electrodes (typically plates) located opposite the wires. Particles are removed from the collection plates by rapping devices that strike the collection and discharge electrodes. The dust falls into hoppers and is conveyed to a disposal system. ESPs are usually used to capture coarse particles at high concentrations. Small particles at low concentrations are not effectively collected by an ESP.

In a fabric filter or baghouse, particle-laden gas passes through the filter bags, retaining particles on the filters. The filters are periodically cleaned via shaking, reverse airflow, or pulse jet cleaning. During cleaning, particles are deposited in a hopper for subsequent disposal. Fabric filters are used for medium and low gas flow streams with high particulate concentrations.

PM/$PM_{10}$ can be removed from a vent stream using a wet scrubber. Vent gas usually flows countercurrently with liquid (water), which removes particulate from the gas. Particulates are then separated from liquid and then disposed.

Depending on the design, cyclones, ESPs, fabric filters, and wet scrubbers can achieve similar removal efficiencies. These techniques are not effective with streams containing a low concentration of small particulates, such as emissions from natural gas and co-product alcohol fired combustion devices. PM/$PM_{10}$ concentrations in the natural gas, alcohol co-product, and propane-fired combustion devices are even less than the concentrations guaranteed by the cyclones, ESPs, fabric filters, and wet scrubbers. Therefore, cyclones, ESPs, fabric filters, and wet scrubbers are rejected as BACT for PM/$PM_{10}$ emissions from the combustion devices.

The next control is good equipment design and proper combustion techniques which are determined as BACT to limit maximum PM emissions to 0.005 lbs/MM BTU from the boilers and 0.008 lbs/MM BTU from the thermal oxidizers. Scrubber will also be used to control halogen emissions from two thermal oxidizers. These scrubbers eventually remove some particulates from the flue gas streams.

**PRELIMINARY DETERMINATION SUMMARY**

**FLOPAM INC.**
**AGENCY INTEREST NO. 166443**
**PLAQUEMINE, IBERVILLE PARISH, LOUISIANA**
**PSD-LA-747, FEBRUARY 20, 2010**

Flopam Inc. proposes to install dust filters to control $PM/PM_{10}$ emissions from the Powder Plant production areas, packaging areas, and loading areas. The large dust filters will have maximum loading of 0.002 grain/scfd. Dust filters are determined as BACT to control particulates emissions. Due to high capital and operating costs, ESP and baghouse were rejected as BACT for $PM/PM_{10}$ emissions from the Powder Plant dryers. Good equipment design and proper operations are determined as BACT for $PM/PM_{10}$ emissions from the Powder Plant dryers.

$PM/PM_{10}$ will also be emitted from roadways. Flopam will pave the main roadway as much as practical and precautions will be taken to prevent dust from becoming airborne. These are determined as BACT for $PM/PM_{10}$ emissions from roadways.

## B. ANALYSIS OF EXISTING AIR QUALITY

PSD regulations require an existing air quality analysis for those pollutant emissions from the proposed major facility. $PM_{10}$, $NO_2$, and CO are the pollutants of concern in this case.

Screening dispersion modeling indicates that maximum offsite ground level concentration of $PM_{10}$ will be 4.97 $\mu g/m^3$ (24-hour average) which is less than the Class II Air Quality Significant Impact Level of 5 $\mu g/m^3$ and monitoring de minimis of 10 $\mu g/m^3$. Maximum concentration of CO is predicted to be 95.7 $\mu g/m^3$ (1-hour average) and 55.0 $\mu g/m^3$ (8-hour average) which are less than the Class II Air Quality Significant Impact Level of 2000 $\mu g/m^3$ (1-hour average) and 500 $\mu g/m^3$ (8-hour average) and the monitoring de minimis of 575 $\mu g/m^3$ (8-hour average). Refined modeling, increment analysis, and preconstruction monitoring were not required for $PM_{10}$ (24 hour average) and CO (1-hour and 8-hour average).

Screening dispersion modeling indicates that annual average of maximum offsite ground level concentration of $NO_2$ will be 2.6 $\mu g/m^3$ which is more than the Class II Air Quality Significant Impact Level of 1$\mu g/m^3$, but less than the monitoring de minimis of 14 $\mu g/m^3$. Refined modeling and increment analysis are required for $NO_X$ and $PM_{10}$ (annual average). Screening dispersion modeling indicates that annual average of maximum offsite ground level concentration of $PM_{10}$ will be 1.14 $\mu g/m^3$ which is more than the Class II Air Quality Significant Impact Level of 1$\mu g/m^3$. There is no monitoring de minimis for annual average $PM_{10}$. Refined modeling and increment analysis are required for $NO_X$ and $PM_{10}$ (annual average). Preconstruction monitoring is not required for $NO_X$ or $PM_{10}$ emissions. The air quality analysis is summarized in Table II.

Emissions of $PM_{2.5}$ will be less than the PSD significance level. Modeling is not required for $PM_{2.5}$ emissions.

## PRELIMINARY DETERMINATION SUMMARY

## FLOPAM INC.
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## PLAQUEMINE, IBERVILLE PARISH, LOUISIANA
## PSD-LA-747, FEBRUARY 20, 2010

### C. NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS) ANALYSIS

Because the screening dispersion modeling indicated that concentration of $NO_2$ emissions will be more than the Class II Air Quality Significant Impact Level, refined modeling is required. Refined modeling predicts that the maximum $NO_X$ impact will be 64.1 $\mu g/m^3$, which includes a background concentration of 15.1 $\mu g/m^3$. $NO_X$ emissions from the proposed Flopam Facility are not expected to cause or contribute to any NAAQS exceedances.

### D. PSD INCREMENT ANALYSIS

Because the screening dispersion modeling indicated that concentration of $NO_2$ and $PM_{10}$ (annual average) emissions will be more than the Class II Air Quality Significant Impact Level, increment analysis is required. Increment analysis indicates that $NO_X$ and $PM_{10}$ emissions from the proposed facility will consume 4.6 $\mu g/m^3$ and 0.8 $\mu g/m^3$, which are less than the Class II Area PSD Incremental Allowances of 25 $\mu g/m^3$ and 17 $\mu g/m^3$, respectively. $NO_X$ and $PM_{10}$ incremental allowances are expected to be preserved.

### E. SOURCE RELATED GROWTH IMPACTS

Secondary growth effects are minimal. The proposed facility will employ approximately 500 direct, full-time employees.

### F. SOILS, VEGETATION, AND VISIBILITY IMPACTS

There will be no significant impact on soils, vegetation, and visibility.

### G. CLASS I AREA IMPACTS

Breton National Wildlife Area, the nearest Class I area, is more than 100 km from the site, precluding any significant impact.

### H. TOXIC IMPACT

The selection of control technology based on the BACT analysis included consideration of control of toxic emissions.

## V. CONCLUSION

The Louisiana Department of Environmental Quality, Office of Environmental Services, has made a preliminary determination to approve the PSD permit (PSD-LA-747) for the proposed Flopam's facility near Plaquemine, Iberville Parish, Louisiana, subject to the attached specific and general conditions. In the event of a discrepancy in the provisions found in the application and those in this Preliminary Determination Summary, the Preliminary Determination Summary shall prevail.

## SPECIFIC CONDITIONS

## FLOPAM INC.
## AGENCY INTEREST NO. 166443
## PLAQUEMINE, IBERVILLE PARISH, LOUISIANA
## PSD-LA-747

1. The permittee is authorized to operate in conformity with the specifications submitted to the Louisiana Department of Environmental Quality (LDEQ) as analyzed in LDEQ's document entitled "Preliminary Determination Summary" dated February 20, 2010 and subject to the BACT determinations listed in Table III and emission limitations listed in Table IV. Specifications submitted are contained in the application dated August 20, 2009 as well as additional information dated November 20, December 4, 2009, January 7, and February 19, 2010.

2. To demonstrate compliance with the limits of this permit, permittee shall perform compliance/emissions tests on for 1) $NO_X$ and CO emissions from any two boilers and 2) $NO_X$, CO, and PM emissions from any two Powder Plant dryers, using methods specified by the cited regulations and 40 CFR 60, Appendix A, Method 5 - Determination of particulate matter emissions from stationary sources, Method 7E - Determination of Nitrogen Oxides Emissions from Stationary Sources for $NO_X$ emissions, Method 10 - Determination of Carbon Monoxide Emissions from Stationary Sources for CO emissions.

3. Permittee shall comply with the Louisiana General Conditions as set forth in LAC 33:III.537 [LAC 33:III.537].

**FLOPAM INC.**
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**PLAQUEMINE, IBERVILLE PARISH, LOUISIANA**
**PSD-LA-747**

**TABLE I: BACT COST SUMMARY PM/$PM_{10}$ EMISSIONS FROM POWDER PLANT DRYERS**

| Control Alternatives | Availability/ Feasibility | Negative Impacts (a) | Control Efficiency (%) | Emissions Reduction (TPY) | Annualized Cost ($/yr) | Cost Effectiveness ($/ton) | Increment Cost Effectiveness ($/ton) | Notes |
|---|---|---|---|---|---|---|---|---|
| ESP for One Dryer | Yes | No | 99.9 | 2.09 | 690,117 | 330,530 | 330,530 | Rejected |
| Baghouse for One Dryer | Yes | No | 99.9 | 2.09 | 528,028 | 252,898 | 252,898 | Rejected |
| No Control | - | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | Selected |
| | | | | | | | | |
| ESP for Ten Dryers | Yes | No | 99.9 | 20.85 | 4,761,454 | 228,377 | 228,377 | Rejected |
| Baghouse for Ten Dryers | Yes | No | 99.9 | 20.85 | 2,347,379 | 112,589 | 112,589 | Rejected |
| No Control | - | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | Selected |
| | | | | | | | | |
| Notes: a) Negative impacts: 1) economic, 2) environmental, 3) energy, 4) safety | | | | | | | | |

# FLOPAM INC.
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## TABLE II: AIR QUALITY ANALYSIS SUMMARY (μg/m³)

| Pollutant | Averaging Period | Preliminary Screening | Significant Monitoring | Level of Significant Impact | At Monitoring Station | | Background | Maximum Modeled | Modeled + Background | NAAQS | Modeled PSD Increment Consumption | Allowable Class II PSD Increment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Monitored Values | Modeling Results | | | | | | |
| $PM_{10}$ | 24-hour | 4.97 | 10 | 5 | | | | NR | | 150 | NR | 30 |
| | Annual | 1.14 | | 1 | | | | NR | | *50 | 0.8 | 17 |
| $NO_2$ | Annual | 2.6 | 14 | 1 | 15.1 | 49.0 | 15.1 | 49.0 | 64.1 | 100 | 4.6 | 25 |
| CO | 1-hour | 95.7 | | 2000 | | | | NR | | 40,000 | NR | |
| | 8-hour | 55.0 | 575 | 500 | | | | NR | | 10,000 | NR | |

NAAQS = National Ambient Air Quality Standards
(*) = Revoked
NR = Not Required

# FLOPAM INC.
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**TABLE III - BACT SELECTION**

| Emission Point | $PM/PM_{10}$ | $NO_x$ | CO |
|---|---|---|---|
| Powder Plant: Dissolution Tanks (0052-0061)<br>Reactors (0062-0071)<br>Grinders (0072-0081)<br>Dryers (0082-0101) | Good equipment design and proper operations<br>Fueled by natural gas/ propane | Good equipment design and proper operations<br>NOX <= 2.40 lb/hr/stack | Good equipment design and proper operations |
| Powder Plant<br>Packaging Area, Loading Area<br>0102 - 0311 | Dust Filters<br>Large dust filters: PM<=0.002 gr/dscf | | |
| Thermal Oxidizers<br>0354, 0372<br>0373, 0383 | good equipment design and proper combustion practices<br>Fueled by natural gas/propane<br><= 0.008 lb/MM BTU | Good equipment design and proper combustion practices<br><= 0.133 lb/MMBTU | Good equipment design and proper combustion practices<br><= 0.08 lbs/MM BTU |
| ATBS Plant – Silos, Hoppers, and Bagging operations<br>0385 - 0396 | No additional control | | |
| Boilers<br>0402 - 0411 | good equipment design and proper combustion practices<br>Fueled by natural gas/alcohol<br><= 0.005 lbs/MM BTU | ULNB<br><= 0.015 lb/MMBTU<br>or <= 9.0 ppmv | good equipment design and proper combustion practices<br><= 0.037 lb/MM BTU |
| Roadway Fugitives<br>FUG0002 | Main roadways will be paved where practical<br>Precautions shall be taken to prevent dust from becoming airborne | | |

# FLOPAM INC.
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### TABLE IV - MAXIMUM ALLOWABLE EMISSION RATES

| EQT | Description<br>AP: Acrylamide Plant CM: Chloromethylation Plant<br>PO: Powder Plant SP: Specialty Products | Maximum Permitted Emission Rates | | | | | |
|---|---|---|---|---|---|---|---|
| | | $PM/PM_{10}$ | | $NO_x$ | | CO | |
| | | lbs/hr | tons/yr | lbs/hr | tons/yr | lbs/hr | tons/yr |
| **EQT0052 - EQT0101 are permitted as Groups GRP0001 - GRP0010** | | | | | | | |
| EQT0052 | POD01 - PO - Dissolution Tanks POD01 | | | | | | |
| EQT0053 | POD02 - PO - Dissolution Tanks POD02 | | | | | | |
| EQT0054 | POD03 - PO - Dissolution Tanks POD03 | | | | | | |
| EQT0055 | POD04 - PO - Dissolution Tanks POD04 | | | | | | |
| EQT0056 | POD05 - PO - Dissolution Tanks POD05 | | | | | | |
| EQT0057 | POD06 - PO - Dissolution Tanks POD06 | | | | | | |
| EQT0058 | POD07 - PO - Dissolution Tanks POD07 | | | | | | |
| EQT0059 | POD08 - PO - Dissolution Tanks POD08 | | | | | | |
| EQT0060 | POD09 - PO - Dissolution Tanks POD09 | | | | | | |
| EQT0061 | POD10 - PO - Dissolution Tanks POD10 | | | | | | |
| EQT0062 | POR01 - PO - Reactors POR01 | | | | | | |
| EQT0063 | POR02 - PO - Reactors POR02 | | | | | | |
| EQT0064 | POR03 - PO - Reactors POR03 | | | | | | |
| EQT0065 | POR04 - PO - Reactors POR04 | | | | | | |
| EQT0066 | POR05 - PO - Reactors POR05 | | | | | | |
| EQT0067 | POR06 - PO - Reactors POR06 | | | | | | |
| EQT0068 | POR07 - PO - Reactors POR07 | | | | | | |
| EQT0069 | POR08 - PO - Reactors POR08 | | | | | | |
| EQT0070 | POR09 - PO - Reactors POR09 | | | | | | |
| EQT0071 | POR10 - PO - Reactors POR10 | | | | | | |
| EQT0072 | POG01 - PO - Grinders POG01 | | | | | | |
| EQT0073 | POG02 - PO - Grinders POG02 | | | | | | |
| EQT0074 | POG03 - PO - Grinders POG03 | | | | | | |
| EQT0075 | POG04 - PO - Grinders POG04 | | | | | | |
| EQT0076 | POG05 - PO - Grinders POG05 | | | | | | |
| EQT0077 | POG06 - PO - Grinders POG06 | | | | | | |
| EQT0078 | POG07 - PO - Grinders POG07 | | | | | | |
| EQT0079 | POG08 - PO - Grinders POG08 | | | | | | |
| EQT0080 | POG09 - PO - Grinders POG09 | | | | | | |
| EQT0081 | POG10 - PO - Grinders POG10 | | | | | | |
| EQT0082 | POD01A - PO - Dryers Line A POD01A | | | | | | |
| EQT0083 | POD01B - PO - Dryers Line B POD01B | | | | | | |
| EQT0084 | POD02A - PO - Dryers Line A POD02A | | | | | | |
| EQT0085 | POD02B - PO - Dryers Line B POD02B | | | | | | |
| EQT0086 | POD03A - PO - Dryers Line A POD03A | | | | | | |
| EQT0087 | POD03B - PO - Dryers Line B POD03B | | | | | | |
| EQT0088 | POD04A - PO - Dryers Line A POD04A | | | | | | |
| EQT0089 | POD04B - PO - Dryers Line B POD04B | | | | | | |
| EQT0090 | POD05A - PO - Dryers Line A POD05A | | | | | | |
| EQT0091 | POD05B - PO - Dryers Line B POD05B | | | | | | |
| EQT0092 | POD06A - PO - Dryers Line A POD06A | | | | | | |

# FLOPAM INC.
# AGENCY INTEREST NO. 166443
# PLAQUEMINE, IBERVILLE PARISH, LOUISIANA
# PSD-LA-747
## TABLE IV - MAXIMUM ALLOWABLE EMISSION RATES

| EQT | Description<br>AP: Acrylamide Plant CM: Chloromethylation Plant<br>PO: Powder Plant SP: Specialty Products | Maximum Permitted Emission Rates | | | | | |
|---|---|---|---|---|---|---|---|
| | | $PM/PM_{10}$ | | $NO_x$ | | CO | |
| | | lbs/hr | tons/yr | lbs/hr | tons/yr | lbs/hr | tons/yr |
| EQT0093 | POD06B - PO - Dryers Line B POD06B | | | | | | |
| EQT0094 | POD07A - PO - Dryers Line A POD07A | | | | | | |
| EQT0095 | POD07B - PO - Dryers Line B POD07B | | | | | | |
| EQT0096 | POD08A - PO - Dryers Line A POD08A | | | | | | |
| EQT0097 | POD08B - PO - Dryers Line B POD08B | | | | | | |
| EQT0098 | POD09A - PO - Dryers Line A POD09A | | | | | | |
| EQT0099 | POD09B - PO - Dryers Line B POD09B | | | | | | |
| EQT0100 | POD10A - PO - Dryers Line A POD10A | | | | | | |
| EQT0101 | POD10B - PO - Dryers Line B POD10B | | | | | | |
| **EQT0102 - EQT0181 are permitted as groups GRP0011 - GRP0020** | | | | | | | |
| EQT0102 | POB01A1 - PO - Dust Collector POB01A1 | | | | | | |
| EQT0103 | POB01A2 - PO - Dust Collector POB01A2 | | | | | | |
| EQT0104 | POB01A3 - PO - Dust Collector POB01A3 | | | | | | |
| EQT0105 | POB01A4 - PO - Dust Collector POB01A4 | | | | | | |
| EQT0106 | POB01A5 - PO - Dust Collector POB01A5 | | | | | | |
| EQT0107 | POB01A6 - PO - Dust Collector POB01A6 | | | | | | |
| EQT0108 | POB01A7 - PO - Dust Collector POB01A7 | | | | | | |
| EQT0109 | POB01A8 - PO - Dust Collector POB01A8 | | | | | | |
| EQT0110 | POB02A1 - PO - Dust Collector POB02A1 | | | | | | |
| EQT0111 | POB02A2 - PO - Dust Collector POB02A2 | | | | | | |
| EQT0112 | POB02A3 - PO - Dust Collector POB02A3 | | | | | | |
| EQT0113 | POB02A4 - PO - Dust Collector POB02A4 | | | | | | |
| EQT0114 | POB02A5 - PO - Dust Collector POB02A5 | | | | | | |
| EQT0115 | POB02A6 - PO - Dust Collector POB02A6 | | | | | | |
| EQT0116 | POB02A7 - PO - Dust Collector POB02A7 | | | | | | |
| EQT0117 | POB02A8 - PO - Dust Collector POB02A8 | | | | | | |
| EQT0118 | POB03A1 - PO - Dust Collector POB03A1 | | | | | | |
| EQT0119 | POB03A2 - PO - Dust Collector POB03A2 | | | | | | |
| EQT0120 | POB03A3 - PO - Dust Collector POB03A3 | | | | | | |
| EQT0121 | POB03A4 - PO - Dust Collector POB03A4 | | | | | | |
| EQT0122 | POB03A5 - PO - Dust Collector POB03A5 | | | | | | |
| EQT0123 | POB03A6 - PO - Dust Collector POB03A6 | | | | | | |
| EQT0124 | POB03A7 - PO - Dust Collector POB03A7 | | | | | | |
| EQT0125 | POB03A8 - PO - Dust Collector POB03A8 | | | | | | |
| EQT0126 | POB04A1 - PO - Dust Collector POB04A1 | | | | | | |
| EQT0127 | POB04A2 - PO - Dust Collector POB04A2 | | | | | | |
| EQT0128 | POB04A3 - PO - Dust Collector POB04A3 | | | | | | |
| EQT0129 | POB04A4 - PO - Dust Collector POB04A4 | | | | | | |
| EQT0130 | POB04A5 - PO - Dust Collector POB04A5 | | | | | | |
| EQT0131 | POB04A6 - PO - Dust Collector POB04A6 | | | | | | |
| EQT0132 | POB04A7 - PO - Dust Collector POB04A7 | | | | | | |
| EQT0133 | POB04A8 - PO - Dust Collector POB04A8 | | | | | | |

# FLOPAM INC.
## AGENCY INTEREST NO. 166443
## PLAQUEMINE, IBERVILLE PARISH, LOUISIANA
## PSD-LA-747
## TABLE IV - MAXIMUM ALLOWABLE EMISSION RATES

| EQT | Description<br>AP: Acrylamide Plant CM: Chloromethylation Plant<br>PO: Powder Plant SP: Specialty Products | Maximum Permitted Emission Rates | | | | | |
|---|---|---|---|---|---|---|---|
| | | $PM/PM_{10}$ | | $NO_x$ | | CO | |
| | | lbs/hr | tons/yr | lbs/hr | tons/yr | lbs/hr | tons/yr |
| EQT0134 | POB05A1 - PO - Dust Collector POB05A1 | | | | | | |
| EQT0135 | POB05A2 - PO - Dust Collector POB05A2 | | | | | | |
| EQT0136 | POB05A3 - PO - Dust Collector POB05A3 | | | | | | |
| EQT0137 | POB05A4 - PO - Dust Collector POB05A4 | | | | | | |
| EQT0138 | POB05A5 - PO - Dust Collector POB05A5 | | | | | | |
| EQT0139 | POB05A6 - PO - Dust Collector POB05A6 | | | | | | |
| EQT0140 | POB05A7 - PO - Dust Collector POB05A7 | | | | | | |
| EQT0141 | POB05A8 - PO - Dust Collector POB05A8 | | | | | | |
| EQT0142 | POB06A1 - PO - Dust Collector POB06A1 | | | | | | |
| EQT0143 | POB06A2 - PO - Dust Collector POB06A2 | | | | | | |
| EQT0144 | POB06A3 - PO - Dust Collector POB06A3 | | | | | | |
| EQT0145 | POB06A4 - PO - Dust Collector POB06A4 | | | | | | |
| EQT0146 | POB06A5 - PO - Dust Collector POB06A5 | | | | | | |
| EQT0147 | POB06A6 - PO - Dust Collector POB06A6 | | | | | | |
| EQT0148 | POB06A7 - PO - Dust Collector POB06A7 | | | | | | |
| EQT0149 | POB06A8 - PO - Dust Collector POB06A8 | | | | | | |
| EQT0150 | POB07A1 - PO - Dust Collector POB07A1 | | | | | | |
| EQT0151 | POB07A2 - PO - Dust Collector POB07A2 | | | | | | |
| EQT0152 | POB07A3 - PO - Dust Collector POB07A3 | | | | | | |
| EQT0153 | POB07A4 - PO - Dust Collector POB07A4 | | | | | | |
| EQT0154 | POB07A5 - PO - Dust Collector POB07A5 | | | | | | |
| EQT0155 | POB07A6 - PO - Dust Collector POB07A6 | | | | | | |
| EQT0156 | POB07A7 - PO - Dust Collector POB07A7 | | | | | | |
| EQT0157 | POB07A8 - PO - Dust Collector POB07A8 | | | | | | |
| EQT0158 | POB08A1 - PO - Dust Collector POB08A1 | | | | | | |
| EQT0159 | POB08A2 - PO - Dust Collector POB08A2 | | | | | | |
| EQT0160 | POB08A3 - PO - Dust Collector POB08A3 | | | | | | |
| EQT0161 | POB08A4 - PO - Dust Collector POB08A4 | | | | | | |
| EQT0162 | POB08A5 - PO - Dust Collector POB08A5 | | | | | | |
| EQT0163 | POB08A6 - PO - Dust Collector POB08A6 | | | | | | |
| EQT0164 | POB08A7 - PO - Dust Collector POB08A7 | | | | | | |
| EQT0165 | POB08A8 - PO - Dust Collector POB08A8 | | | | | | |
| EQT0166 | POB09A1 - PO - Dust Collector POB09A1 | | | | | | |
| EQT0167 | POB09A2 - PO - Dust Collector POB09A2 | | | | | | |
| EQT0168 | POB09A3 - PO - Dust Collector POB09A3 | | | | | | |
| EQT0169 | POB09A4 - PO - Dust Collector POB09A4 | | | | | | |
| EQT0170 | POB09A5 - PO - Dust Collector POB09A5 | | | | | | |
| EQT0171 | POB09A6 - PO - Dust Collector POB09A6 | | | | | | |
| EQT0172 | POB09A7 - PO - Dust Collector POB09A7 | | | | | | |
| EQT0173 | POB09A8 - PO - Dust Collector POB09A8 | | | | | | |
| EQT0174 | POB10A1 - PO - Dust Collector POB10A1 | | | | | | |
| EQT0175 | POB10A2 - PO - Dust Collector POB10A2 | | | | | | |

# FLOPAM INC.
# AGENCY INTEREST NO. 166443
# PLAQUEMINE, IBERVILLE PARISH, LOUISIANA
# PSD-LA-747
## TABLE IV - MAXIMUM ALLOWABLE EMISSION RATES

| EQT | Description | Maximum Permitted Emission Rates | | | | | |
|---|---|---|---|---|---|---|---|
| | AP: Acrylamide Plant CM: Chloromethylation Plant | $PM/PM_{10}$ | | $NO_x$ | | CO | |
| | PO: Powder Plant SP: Specialty Products | lbs/hr | tons/yr | lbs/hr | tons/yr | lbs/hr | tons/yr |
| EQT0176 | POB10A3 - PO - Dust Collector POB10A3 | | | | | | |
| EQT0177 | POB10A4 - PO - Dust Collector POB10A4 | | | | | | |
| EQT0178 | POB10A5 - PO - Dust Collector POB10A5 | | | | | | |
| EQT0179 | POB10A6 - PO - Dust Collector POB10A6 | | | | | | |
| EQT0180 | POB10A7 - PO - Dust Collector POB10A7 | | | | | | |
| EQT0181 | POB10A8 - PO - Dust Collector POB10A8 | | | | | | |
| **EQT0182 - EQT0301 are permitted as groups GRP0021 - GRP0030** | | | | | | | |
| EQT0182 | POB01B1 - PO - Dust Collector POB01B1 | | | | | | |
| EQT0183 | POB01B2 - PO - Dust Collector POB01B2 | | | | | | |
| EQT0184 | POB01B3 - PO - Dust Collector POB01B3 | | | | | | |
| EQT0185 | POB01B4 - PO - Dust Collector POB01B4 | | | | | | |
| EQT0186 | POB01B5 - PO - Dust Collector POB01B5 | | | | | | |
| EQT0187 | POB01B6 - PO - Dust Collector POB01B6 | | | | | | |
| EQT0188 | POB01B7 - PO - Dust Collector POB01B7 | | | | | | |
| EQT0189 | POB01B8 - PO - Dust Collector POB01B8 | | | | | | |
| EQT0190 | POB01B9 - PO - Dust Collector POB01B9 | | | | | | |
| EQT0191 | POB01B10 - PO - Dust Collector POB01B10 | | | | | | |
| EQT0192 | POB01B11 - PO - Dust Collector POB01B11 | | | | | | |
| EQT0193 | POB01B12 - PO - Dust Collector POB01B12 | | | | | | |
| EQT0194 | POB02B1 - PO - Dust Collector POB02B1 | | | | | | |
| EQT0195 | POB02B2 - PO - Dust Collector POB02B2 | | | | | | |
| EQT0196 | POB02B3 - PO - Dust Collector POB02B3 | | | | | | |
| EQT0197 | POB02B4 - PO - Dust Collector POB02B4 | | | | | | |
| EQT0198 | POB02B5 - PO - Dust Collector POB02B5 | | | | | | |
| EQT0199 | POB02B6 - PO - Dust Collector POB02B6 | | | | | | |
| EQT0200 | POB02B7 - PO - Dust Collector POB02B7 | | | | | | |
| EQT0201 | POB02B8 - PO - Dust Collector POB02B8 | | | | | | |
| EQT0202 | POB02B9 - PO - Dust Collector POB02B9 | | | | | | |
| EQT0203 | POB02B10 - PO - Dust Collector POB02B10 | | | | | | |
| EQT0204 | POB02B11 - PO - Dust Collector POB02B11 | | | | | | |
| EQT0205 | POB02B12 - PO - Dust Collector POB02B12 | | | | | | |
| EQT0206 | POB03B1 - PO - Dust Collector POB03B1 | | | | | | |
| EQT0207 | POB03B2 - PO - Dust Collector POB03B2 | | | | | | |
| EQT0208 | POB03B3 - PO - Dust Collector POB03B3 | | | | | | |
| EQT0209 | POB03B4 - PO - Dust Collector POB03B4 | | | | | | |
| EQT0210 | POB03B5 - PO - Dust Collector POB03B5 | | | | | | |
| EQT0211 | POB03B6 - PO - Dust Collector POB03B6 | | | | | | |
| EQT0212 | POB03B7 - PO - Dust Collector POB03B7 | | | | | | |
| EQT0213 | POB03B8 - PO - Dust Collector POB03B8 | | | | | | |
| EQT0214 | POB03B9 - PO - Dust Collector POB03B9 | | | | | | |
| EQT0215 | POB03B10 - PO - Dust Collector POB03B10 | | | | | | |
| EQT0216 | POB03B11 - PO - Dust Collector POB03B11 | | | | | | |

# FLOPAM INC.
# AGENCY INTEREST NO. 166443
# PLAQUEMINE, IBERVILLE PARISH, LOUISIANA
# PSD-LA-747
## TABLE IV - MAXIMUM ALLOWABLE EMISSION RATES

| EQT | Description<br>AP: Acrylamide Plant CM: Chloromethylation Plant<br>PO: Powder Plant SP: Specialty Products | Maximum Permitted Emission Rates | | | | | |
|---|---|---|---|---|---|---|---|
| | | $PM/PM_{10}$ | | $NO_x$ | | CO | |
| | | lbs/hr | tons/yr | lbs/hr | tons/yr | lbs/hr | tons/yr |
| EQT0217 | POB03B12 - PO - Dust Collector POB03B12 | | | | | | |
| EQT0218 | POB04B1 - PO - Dust Collector POB04B1 | | | | | | |
| EQT0219 | POB04B2 - PO - Dust Collector POB04B2 | | | | | | |
| EQT0220 | POB04B3 - PO - Dust Collector POB04B3 | | | | | | |
| EQT0221 | POB04B4 - PO - Dust Collector POB04B4 | | | | | | |
| EQT0222 | POB04B5 - PO - Dust Collector POB04B5 | | | | | | |
| EQT0223 | POB04B6 - PO - Dust Collector POB04B6 | | | | | | |
| EQT0224 | POB04B7 - PO - Dust Collector POB04B7 | | | | | | |
| EQT0225 | POB04B8 - PO - Dust Collector POB04B8 | | | | | | |
| EQT0226 | POB04B9 - PO - Dust Collector POB04B9 | | | | | | |
| EQT0227 | POB04B10 - PO - Dust Collector POB04B10 | | | | | | |
| EQT0228 | POB04B11 - PO - Dust Collector POB04B11 | | | | | | |
| EQT0229 | POB04B12 - PO - Dust Collector POB04B12 | | | | | | |
| EQT0230 | POB05B1 - PO - Dust Collector POB05B1 | | | | | | |
| EQT0231 | POB05B2 - PO - Dust Collector POB05B2 | | | | | | |
| EQT0232 | POB05B3 - PO - Dust Collector POB05B3 | | | | | | |
| EQT0233 | POB05B4 - PO - Dust Collector POB05B4 | | | | | | |
| EQT0234 | POB05B5 - PO - Dust Collector POB05B5 | | | | | | |
| EQT0235 | POB05B6 - PO - Dust Collector POB05B6 | | | | | | |
| EQT0236 | POB05B7 - PO - Dust Collector POB05B7 | | | | | | |
| EQT0237 | POB05B8 - PO - Dust Collector POB05B8 | | | | | | |
| EQT0238 | POB05B9 - PO - Dust Collector POB05B9 | | | | | | |
| EQT0239 | POB05B10 - PO - Dust Collector POB05B10 | | | | | | |
| EQT0240 | POB05B11 - PO - Dust Collector POB05B11 | | | | | | |
| EQT0241 | POB05B12 - PO - Dust Collector POB05B12 | | | | | | |
| EQT0242 | POB06B1 - PO - Dust Collector POB06B1 | | | | | | |
| EQT0243 | POB06B2 - PO - Dust Collector POB06B2 | | | | | | |
| EQT0244 | POB06B3 - PO - Dust Collector POB06B3 | | | | | | |
| EQT0245 | POB06B4 - PO - Dust Collector POB06B4 | | | | | | |
| EQT0246 | POB06B5 - PO - Dust Collector POB06B5 | | | | | | |
| EQT0247 | POB06B6 - PO - Dust Collector POB06B6 | | | | | | |
| EQT0248 | POB06B7 - PO - Dust Collector POB06B7 | | | | | | |
| EQT0249 | POB06B8 - PO - Dust Collector POB06B8 | | | | | | |
| EQT0250 | POB06B9 - PO - Dust Collector POB06B9 | | | | | | |
| EQT0251 | POB06B10 - PO - Dust Collector POB06B10 | | | | | | |
| EQT0252 | POB06B11 - PO - Dust Collector POB06B11 | | | | | | |
| EQT0253 | POB06B12 - PO - Dust Collector POB06B12 | | | | | | |
| EQT0254 | POB07B1 - PO - Dust Collector POB07B1 | | | | | | |
| EQT0255 | POB07B2 - PO - Dust Collector POB07B2 | | | | | | |
| EQT0256 | POB07B3 - PO - Dust Collector POB07B3 | | | | | | |
| EQT0257 | POB07B4 - PO - Dust Collector POB07B4 | | | | | | |
| EQT0258 | POB07B5 - PO - Dust Collector POB07B5 | | | | | | |

# FLOPAM INC.
## AGENCY INTEREST NO. 166443
## PLAQUEMINE, IBERVILLE PARISH, LOUISIANA
## PSD-LA-747
## TABLE IV - MAXIMUM ALLOWABLE EMISSION RATES

| EQT | Description<br>AP: Acrylamide Plant CM: Chloromethylation Plant<br>PO: Powder Plant SP: Specialty Products | Maximum Permitted Emission Rates | | | | | |
|---|---|---|---|---|---|---|---|
| | | $PM/PM_{10}$ | | $NO_x$ | | CO | |
| | | lbs/hr | tons/yr | lbs/hr | tons/yr | lbs/hr | tons/yr |
| EQT0259 | POB07B6 - PO - Dust Collector POB07B6 | | | | | | |
| EQT0260 | POB07B7 - PO - Dust Collector POB07B7 | | | | | | |
| EQT0261 | POB07B8 - PO - Dust Collector POB07B8 | | | | | | |
| EQT0262 | POB07B9 - PO - Dust Collector POB07B9 | | | | | | |
| EQT0263 | POB07B10 - PO - Dust Collector POB07B10 | | | | | | |
| EQT0264 | POB07B11 - PO - Dust Collector POB07B11 | | | | | | |
| EQT0265 | POB07B12 - PO - Dust Collector POB07B12 | | | | | | |
| EQT0266 | POB08B1 - PO - Dust Collector POB08B1 | | | | | | |
| EQT0267 | POB08B2 - PO - Dust Collector POB08B2 | | | | | | |
| EQT0268 | POB08B3 - PO - Dust Collector POB08B3 | | | | | | |
| EQT0269 | POB08B4 - PO - Dust Collector POB08B4 | | | | | | |
| EQT0270 | POB08B5 - PO - Dust Collector POB08B5 | | | | | | |
| EQT0271 | POB08B6 - PO - Dust Collector POB08B6 | | | | | | |
| EQT0272 | POB08B7 - PO - Dust Collector POB08B7 | | | | | | |
| EQT0273 | POB08B8 - PO - Dust Collector POB08B8 | | | | | | |
| EQT0274 | POB08B9 - PO - Dust Collector POB08B9 | | | | | | |
| EQT0275 | POB08B10 - PO - Dust Collector POB08B10 | | | | | | |
| EQT0276 | POB08B11 - PO - Dust Collector POB08B11 | | | | | | |
| EQT0277 | POB08B12 - PO - Dust Collector POB08B12 | | | | | | |
| EQT0278 | POB09B1 - PO - Dust Collector POB09B1 | | | | | | |
| EQT0279 | POB09B2 - PO - Dust Collector POB09B2 | | | | | | |
| EQT0280 | POB09B3 - PO - Dust Collector POB09B3 | | | | | | |
| EQT0281 | POB09B4 - PO - Dust Collector POB09B4 | | | | | | |
| EQT0282 | POB09B5 - PO - Dust Collector POB09B5 | | | | | | |
| EQT0283 | POB09B6 - PO - Dust Collector POB09B6 | | | | | | |
| EQT0284 | POB09B7 - PO - Dust Collector POB09B7 | | | | | | |
| EQT0285 | POB09B8 - PO - Dust Collector POB09B8 | | | | | | |
| EQT0286 | POB09B9 - PO - Dust Collector POB09B9 | | | | | | |
| EQT0287 | POB09B10 - PO - Dust Collector POB09B10 | | | | | | |
| EQT0288 | POB09B11 - PO - Dust Collector POB09B11 | | | | | | |
| EQT0289 | POB09B12 - PO - Dust Collector POB09B12 | | | | | | |
| EQT0290 | POB10B1 - PO - Dust Collector POB10B1 | | | | | | |
| EQT0291 | POB10B2 - PO - Dust Collector POB10B2 | | | | | | |
| EQT0292 | POB10B3 - PO - Dust Collector POB10B3 | | | | | | |
| EQT0293 | POB10B4 - PO - Dust Collector POB10B4 | | | | | | |
| EQT0294 | POB10B5 - PO - Dust Collector POB10B5 | | | | | | |
| EQT0295 | POB10B6 - PO - Dust Collector POB10B6 | | | | | | |
| EQT0296 | POB10B7 - PO - Dust Collector POB10B7 | | | | | | |
| EQT0297 | POB10B8 - PO - Dust Collector POB10B8 | | | | | | |
| EQT0298 | POB10B9 - PO - Dust Collector POB10B9 | | | | | | |
| EQT0299 | POB10B10 - PO - Dust Collector POB10B10 | | | | | | |
| EQT0300 | POB10B11 - PO - Dust Collector POB10B11 | | | | | | |

# FLOPAM INC.
## AGENCY INTEREST NO. 166443
## PLAQUEMINE, IBERVILLE PARISH, LOUISIANA
## PSD-LA-747
## TABLE IV - MAXIMUM ALLOWABLE EMISSION RATES

| EQT | Description<br>AP: Acrylamide Plant CM: Chloromethylation Plant<br>PO: Powder Plant SP: Specialty Products | Maximum Permitted Emission Rates | | | | | |
|---|---|---|---|---|---|---|---|
| | | $PM/PM_{10}$ | | $NO_x$ | | CO | |
| | | lbs/hr | tons/yr | lbs/hr | tons/yr | lbs/hr | tons/yr |
| EQT0301 | POB10B12 - PO - Dust Collector POB10B12 | | | | | | |
| EQT0302 | POPKG1 - PO - Packaging Area 1 - Dust Collector POPKG1 | < 0.01 | <0.01 | | | | |
| EQT0303 | POPKG2 - PO - Packaging Area 2 - Dust Collector POPKG2 | < 0.01 | <0.01 | | | | |
| EQT0304 | POTTBH - PO - Truck Loading Area – Dust Collector POTTBH | < 0.01 | <0.01 | | | | |
| EQT0305 | POTTBV1 - PO - Truck Loading Area Silo – Dust Collector POTTBV1 | < 0.01 | <0.01 | | | | |
| EQT0306 | POTTBV2 - PO - Truck Loading Area Silo – Dust Collector POTTBV2 | < 0.01 | <0.01 | | | | |
| EQT0307 | PORCBH - PO - Railcar Loading Area – Dust Collector PORCBH | < 0.01 | 0.01 | | | | |
| EQT0308 | PORCBV1 - PO - Railcar Loading Area Silo – Dust Collector PORCBV1 | < 0.01 | < 0.01 | | | | |
| EQT0309 | PORCBV2 - PO - Railcar Loading Area Silo – Dust Collector PORCBV2 | < 0.01 | < 0.01 | | | | |
| EQT0310 | PORCBV3 - PO - Railcar Loading Area Silo – Dust Collector PORCBV3 | < 0.01 | < 0.01 | | | | |
| EQT0311 | PORCBV4 - PO - Railcar Loading Area Silo – Dust Collector PORCBV4 | < 0.01 | < 0.01 | | | | |
| EQT0354 | TO-DAD1 - DADMAC Plant - Thermal Oxidizer TO-DAD1 | Vented to EQT0355 | | | | | |
| EQT0355 | SC-DAD1 - DADMAC Plant - Thermal Oxidizer Vent Scrubber SC-DAD1 | 0.07 | 0.31 | 1.23 | 5.37 | 0.77 | 3.39 |
| EQT0372 | TO-AD1 - ADAM/ATBS Plant Thermal Oxidizer TO-AD1 | 0.05 | 0.23 | 0.91 | 4.00 | 0.58 | 2.52 |
| EQT0373 | TO-AD2 - ADAM/ATBS Plant Thermal Oxidizer TO-AD2 (Back-up) | 0.05 | | 0.91 | | 0.58 | |
| EQT0383 | TO-CM1 - CM - Thermal Oxidizer TOCM1 | Vented to EQT0384 | | | | | |
| EQT0384 | SC-CM1 - CM - Thermal Oxidizer Vent Scrubber SC-CM1 | 0.06 | 0.24 | 0.98 | 4.28 | 0.62 | 2.71 |
| **EQT0385 through EQT0396 are permitted as Group GRP0031** | | | | | | | |
| EQT0385 | AT-SL1 - ATBS Plant - Silo AT-SL1 | | | | | | |
| EQT0386 | AT-SL2 - ATBS Plant - Silo AT-SL2 | | | | | | |
| EQT0387 | AT-SL3 - ATBS Plant - Silo AT-SL3 | | | | | | |
| EQT0388 | AT-SL4 - ATBS Plant - Silo AT-SL4 | | | | | | |
| EQT0389 | AT-HP1 - ATBS Plant - Hopper AT-HP1 | | | | | | |
| EQT0390 | AT-HP2 - ATBS Plant - Hopper AT-HP2 | | | | | | |
| EQT0391 | AT-HP3 - ATBS Plant - Hopper AT-HP3 | | | | | | |
| EQT0392 | AT-HP4 - ATBS Plant - Hopper AT-HP4 | | | | | | |
| EQT0393 | AT-BG1 - ATBS Plant - Bagging Operations AT-BG1 | | | | | | |
| EQT0394 | AT-BG2 - ATBS Plant - Bagging Operations AT-BG2 | | | | | | |
| EQT0395 | AT-BG3 - ATBS Plant - Bagging Operations AT-BG3 | | | | | | |
| EQT0396 | AT-BG4 - ATBS Plant - Bagging Operations AT-BG4 | | | | | | |
| EQT0402 | B1 - Boiler B1 | 0.10 | 0.44 | 0.38 | 1.24 | 0.93 | 3.05 |
| EQT0403 | B2 - Boiler B2 | 0.10 | 0.44 | 0.38 | 1.24 | 0.93 | 3.05 |
| EQT0404 | B3 - Boiler B3 | 0.10 | 0.44 | 0.38 | 1.24 | 0.93 | 3.05 |
| EQT0405 | B4 - Boiler B4 | 0.10 | 0.44 | 0.38 | 1.24 | 0.93 | 3.05 |
| EQT0406 | B5 - Boiler B5 | 0.10 | 0.44 | 0.38 | 1.24 | 0.93 | 3.05 |
| EQT0407 | B6 - Boiler B6 | 0.10 | 0.44 | 0.38 | 1.24 | 0.93 | 3.05 |
| EQT0408 | B7 - Boiler B7 | 0.10 | 0.44 | 0.38 | 1.24 | 0.93 | 3.05 |
| EQT0409 | B8 - Boiler B8 | 0.10 | 0.44 | 0.38 | 1.24 | 0.93 | 3.05 |

# FLOPAM INC.
## AGENCY INTEREST NO. 166443
## PLAQUEMINE, IBERVILLE PARISH, LOUISIANA
## PSD-LA-747
## TABLE IV - MAXIMUM ALLOWABLE EMISSION RATES

| EQT | Description | Maximum Permitted Emission Rates | | | | | |
|---|---|---|---|---|---|---|---|
| | AP: Acrylamide Plant CM: Chloromethylation Plant | $PM/PM_{10}$ | | $NO_x$ | | CO | |
| | PO: Powder Plant SP: Specialty Products | lbs/hr | tons/yr | lbs/hr | tons/yr | lbs/hr | tons/yr |
| EQT0410 | B9 - Boiler B9 | 0.10 | 0.44 | 0.38 | 1.24 | 0.93 | 3.05 |
| EQT0411 | B10 - Boiler B10 | 0.10 | 0.44 | 0.38 | 1.24 | 0.93 | 3.05 |
| FUG0002 | ROAD - Roadway Fugitive Emissions | 0.04 | 0.19 | | | | |
| GRP0001 | PO01 - PO 1 - Process Sources | 0.41 | 1.77 | 2.40 | 10.51 | 3.85 | 16.88 |
| GRP0002 | PO02 - PO 2 - Process Sources | 0.41 | 1.77 | 2.40 | 10.51 | 3.85 | 16.88 |
| GRP0003 | PO03 - PO 3 - Process Sources | 0.41 | 1.77 | 2.40 | 10.51 | 3.85 | 16.88 |
| GRP0004 | PO04 - PO 4 - Process Sources | 0.41 | 1.77 | 2.40 | 10.51 | 3.85 | 16.88 |
| GRP0005 | PO05 - PO 5 - Process Sources | 0.41 | 1.77 | 2.40 | 10.51 | 3.85 | 16.88 |
| GRP0006 | PO06 - PO 6 - Process Sources | 0.41 | 1.77 | 2.40 | 10.51 | 3.85 | 16.88 |
| GRP0007 | PO07 - PO 7 - Process Sources | 0.41 | 1.77 | 2.40 | 10.51 | 3.85 | 16.88 |
| GRP0008 | PO08 - PO 8 - Process Sources | 0.41 | 1.77 | 2.40 | 10.51 | 3.85 | 16.88 |
| GRP0009 | PO09 - PO 9 - Process Sources | 0.41 | 1.77 | 2.40 | 10.51 | 3.85 | 16.88 |
| GRP0010 | PO10 - PO 10 - Process Sources | 0.41 | 1.77 | 2.40 | 10.51 | 3.85 | 16.88 |
| GRP0011 | POB01A - PO 1 - Screening, Bagging, Packaging | 0.10 | 0.44 | | | | |
| GRP0012 | POB02A - PO 2 - Screening, Bagging, Packaging | 0.10 | 0.44 | | | | |
| GRP0013 | POB03A - PO 3 - Screening, Bagging, Packaging | 0.10 | 0.44 | | | | |
| GRP0014 | POB04A - PO 4 - Screening, Bagging, Packaging | 0.10 | 0.44 | | | | |
| GRP0015 | POB05A - PO 5 - Screening, Bagging, Packaging | 0.10 | 0.44 | | | | |
| GRP0016 | POB06A - PO 6 - Screening, Bagging, Packaging | 0.10 | 0.44 | | | | |
| GRP0017 | POB07A - PO 7 - Screening, Bagging, Packaging | 0.10 | 0.44 | | | | |
| GRP0018 | POB08A - PO 8 - Screening, Bagging, Packaging | 0.10 | 0.44 | | | | |
| GRP0019 | POB09A - PO 9 - Screening, Bagging, Packaging | 0.10 | 0.44 | | | | |
| GRP0020 | POB10A - PO 10 - Screening, Bagging, Packaging | 0.10 | 0.44 | | | | |
| GRP0021 | POB01B - PO 1 - Final Product Handling | < 0.01 | < 0.01 | | | | |
| GRP0022 | POB02B - PO 2 - Final Product Handling | < 0.01 | < 0.01 | | | | |
| GRP0023 | POB03B - PO 3 - Final Product Handling | < 0.01 | < 0.01 | | | | |
| GRP0024 | POB04B - PO 4 - Final Product Handling | < 0.01 | < 0.01 | | | | |
| GRP0025 | POB05B - PO 5 - Final Product Handling | < 0.01 | < 0.01 | | | | |
| GRP0026 | POB06B - PO 6 - Final Product Handling | < 0.01 | < 0.01 | | | | |
| GRP0027 | POB07B - PO 7 - Final Product Handling | < 0.01 | < 0.01 | | | | |
| GRP0028 | POB08B - PO 8 - Final Product Handling | < 0.01 | < 0.01 | | | | |
| GRP0029 | POB09B - PO 9 - Final Product Handling | < 0.01 | < 0.01 | | | | |
| GRP0030 | POB10B - PO 10 - Final Product Handling | < 0.01 | < 0.01 | | | | |
| GRP0031 | ATB1 - ATBS Plant - Bagging Areas Operations | < 0.01 | 0.01 | | | | |
| **UNF0001** | **AI166443 – Flopam Facility** | **$PM_{10}$**<br>**$PM_{2.5}$**<br>**PM** | **27.68**<br>**7.76**<br>**29.58** | | **131.15** | | **207.92** |